

## ***Lightning Safety***



Signal Branch Safety Office  
(706) 791-7233

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## ***Lightning Facts***

2<sup>nd</sup> Leading Cause of Weather Deaths in the United States

**Kills more than Hurricanes and  
Tornadoes combined!**

- Kills ~ 100 / Year
- Kills ~ 10% of those  
Struck



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## ***Lightning Facts***

**Survivors are an even greater tragedy!**

- Injures ~750 / Year
- ~ 70% Long-Term Medical  
Problems
- ~ 30% Suffer Debilitating  
Problems
- Elusive Data
  - 40 - 70% Under-Reported



Courtesy of National Lightning Safety Institute

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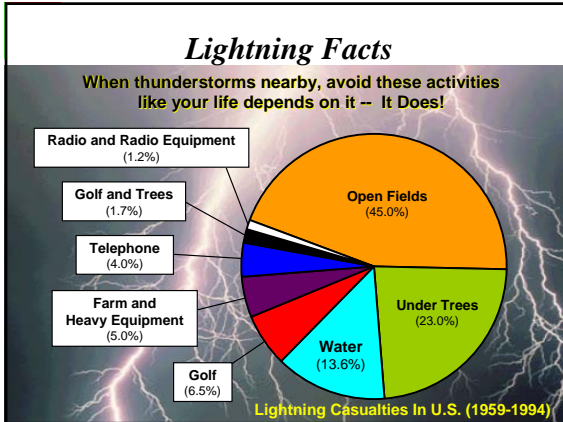
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### *Lightning Safety when Outdoors*

If you can see lightning or hear thunder, activate your safety plan. Resume activities only when lightning and thunder have not been observed for thirty minutes.

***If you can see it (lightning), flee it;  
if you can hear it (thunder), clear it.***

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### *Lightning Safety*

- **"30 / 30 Rule"**
- If **30 Secs Or Less** "Flash To Bang"- Seek Shelter

#### **COMMON MISCONCEPTION**

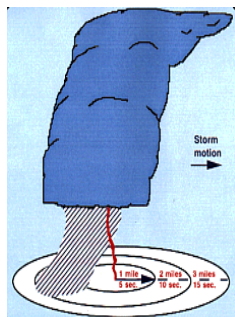
1 second = 1 mile

**ACTUALLY**

**5 seconds = 1 mile**

- Wait **30 Min** After Last Lightning, Before Leaving Shelter

May Seem Too Conservative-- It's NOT!




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## Lightning Safety



- Important Components Of A Dispersal/Safety Plan
  - Designated individual responsible to monitor the weather and initiate the necessary precautions when appropriate.
  - Procedure identified to notify all personnel of the appropriate actions when there is a threat or risk of lightning.
  - Safer locations must be pre-identified along with a means to route personnel to those locations.
  - Establishment of an "All Clear" signal which is differentiated from the warning signal.
  - Periodically [Review / Train / Drill Dispersal Plan](#)

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## Associated Hazards

Contrary to common belief, most lightning accidents do not come from direct lightning strikes. There are several ways lightning can cause injury.



### COMMUNICATION

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## Tactical Communication

- Equipment will be grounded IAW grounding instructions contained in applicable TMs. Remember that soil type impacts the grounding.
- Keep away from antennas, masts, guy wires and all grounding and lightning protection equipment, including ground rods, during electrical storm activity. This includes vehicles with whip antennas.

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## Tactical Communication

- If mission permits, disconnect the signal inputs before the storm. Do not attempt this during the storm, even if lightning is not nearby!
- Restrict the use of telephones, computers and other electrical devices. Lightning could follow the wire. Most lightning injuries occur from using phones during electrical storms.
- Radios will not be used, nor will troops carry radios with antennas extended.

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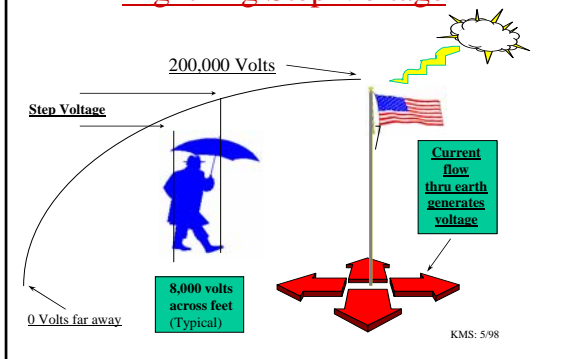
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## Lightning Step Voltage



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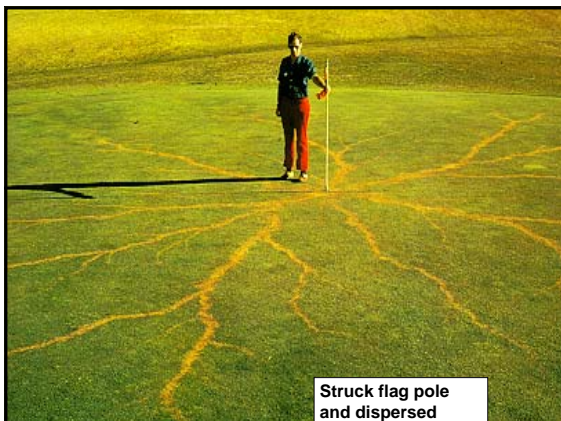
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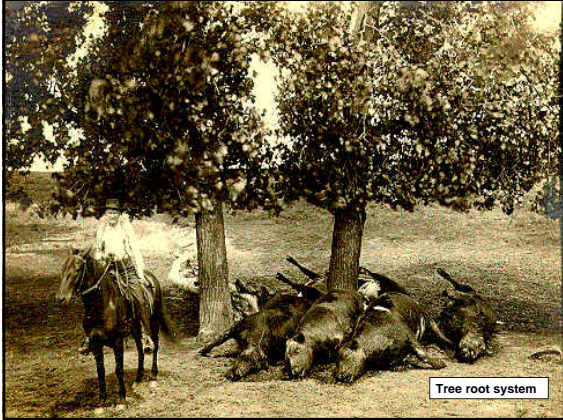
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## Safe Locations #1

- No place is absolutely safe from lightning. Ideally, evacuation to a lightning certified or lightning protected building is the best when available; however, this will probably not be the case.

THEN

- Large enclosed structures (substantially constructed buildings).




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## Indoor Lightning Safety

- Avoid using telephone (remember the wires).
- Avoid using water – sink, tub, etc. (plumbing)
- Unplug appliances (remember the wires).
- Inner rooms the best




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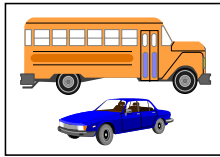
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## Safe Locations #2



**Not** Canvas Type (soft) Tops

- Fully enclosed metal vehicles – car, bus, etc.
  - Close windows
  - Keep hands on lap

It's not the rubber tires that make a vehicle safe – it's the metal enclosure.

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## Safe Locations #3

- Remaining Outdoors
  - Stay away from rivers, lakes, or other bodies of water. Be aware of the potential for flooding in low-lying areas.
  - Stay away from natural lightning rods/tall structures such as: towers, tall trees, telephone poles/lines, tents with metal supports, etc.
  - Take shelter under a small tree among several large ones if possible. Stay at least six feet away from the tree trunk to minimize a side strike and step voltage. NEVER stand under an isolated tree.

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## Safe Locations #3 (con't)

- Stay low (crouch) in a ditch or depression. Other options include a low area, ravine, or foot of a hill. **DO NOT** lie flat on ground.
- Weapons should be stacked at least 50 meters away from personnel.
- Miles gear and other metal conductors should be removed.

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## Lightning Safety Position (LSP)

- Assume LSP.  
Crouch with feet as close together as possible.  
Have heels touch.  
Place hands over ears.

**-REMEMBER-  
DO NOT LIE FLAT  
ON THE GROUND**



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## Lightning Safe Locations



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## Lightning Safety Websites

- 45<sup>th</sup> Weather Squadron Lightning Safety Website:  
<http://www.patrick.af.mil/45og/45ws/LightningSafety/index.htm>
- NOAA Lightning Safety:  
<http://www.lightningsafety.noaa.gov/>
- CECOM Publications (Antenna Safety, Grounding, etc.)  
<http://www.monmouth.army.mil/cecom/safety/SYSTEM/SPUB.HTM>
- Kids' Lightning Information and Safety:  
<http://www.azstarnet.com/anubis/zaphome.htm>

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